

EMISSION OFFSETS AVAILABILITY ISSUES WORKSHOP SUMMARY

INTRODUCTION

On February 14, 2001, the California Energy Commission (Energy Commission) conducted the Emission Offsets Availability Issues Constraints Workshop to identify and discuss emission offset constraint issues that may affect the licensing of future power plants by the Energy Commission. The workshop focused on the following topics: (1) emission offset regulations and availability; and (2) measures to increase offset availability. The purpose of the workshop was to obtain the information needed to develop appropriate actions, if any, to avoid emission offset constraints to the licensing of future power plants.

OVERVIEW OF ORAL PRESENTATIONS

After Commissioners Laurie and Pernell explained the purpose of the workshop, William Walters, of Aspen Environmental Group, an Energy Commission subcontractor, summarized the staff's overview paper, available before the workshop in a February 1, 2001, entitled "Emission Offsets Availability Issues". This included the air quality regulatory requirements for emission offsets and the variability in these regulations between air districts; and the general method for creating emission reduction credits was then discussed. Some air districts allow inter-pollutant trading and some allow inter-basin trading; all have specific requirements that trading provide a net air quality benefit. Offsets are required in most areas of California for projects within the Energy Commission's jurisdiction. Emission Reduction Credit (ERC) availability is becoming a constraint in the siting process in some areas and the cost of ERCs is increasing rapidly. A few case histories were summarized, including the inter-pollutant trading that has been performed in the Bay Area and San Joaquin Valley.

PANEL 1: EMISSION OFFSET REGULATORY REQUIREMENTS

Duong Nguyen, United States Environmental Protection Agency

EPA requires that offsets be from emission reductions that are permanent, quantifiable, enforceable and surplus. Further emission reductions must be achieved prior to beginning construction of any new source that triggers offset requirements. EPA allows inter-district/inter-basin emission reduction credit trading when trading from an upwind district/basin of worse air quality to a down wind district/basin. EPA allows inter-pollutant trading for pollutants with known precursor effects, but they do not encourage its use due to the uncertainties regarding what offset ratios will properly offset impacts. EPA also allows the use of mobile source emission reduction credits (MERCs). The requirement for offsets and offset ratios are tied to the required dates for attainment and magnitude of non-attainment. Additionally, there are mandated emission reductions for non-attainment areas specified in the State Implementation Plan (SIP) and requirements to reach attainment goals by specified dates. If the mandated emission reductions or attainment goals are not met then offset trigger levels can be lowered,

required offset ratios can be raised to as high as 2:1 and other sanctions, such as reductions in highway funding, can occur.

Mohsen Nazemi, South Coast Air Quality Management District

The South Coast Air Quality Management District (SCAQMD) has permitting authority for the South Coast Air Basin (SCAB), with over 29,000 permitted facilities and 15 million people. For the power plant licensing process, SCAQMD issues a Preliminary Determination of Compliance (PDOC), a Final Determination of Compliance (FDOC), and operating permits (including the Title V operating permit). EPA has final authority over the Title V operating permit. The offset requirements for SCAQMD are based on Federal, State and local regulations. SCAQMD's attainment status (severe non-attainment for ozone, non-attainment for PM10 and non-attainment for CO concentrations) drives its regulatory requirements. The New Source Review process first requires sources to install Best Available Control Technology (BACT) or Lowest Achievable Emission Rate (LAER) technology, as well as, offset emissions when they are greater than 4 tons per year for any of the criteria pollutants, using emission reduction credits at a ratio of 1.2 to 1. Sources below 4 tons per year also require emission offsets; however, these offsets are provided by SCAQMD. Additionally, SCAQMD has an emission reduction credit priority reserve for use at facilities that provide an essential public service. Power plants are currently in the RECLAIM program for NOx emissions. There are approximately 380 sources in the RECLAIM program and 28,000+ facilities in the regular permitting/offset program.

Emission reduction credits are created by facility shutdown and control beyond BACT requirements. Normally, ERCs can be created when reductions beyond Reasonably Available Control Technology (RACT) are made; however, SCAQMD can only approve ERCs for those reductions beyond BACT emission levels. SCAQMD allows certain inter-pollutant ERC use but only allows district ERCs to be used as inter-district/basin offsets for downwind districts. The SCAQMD ERC bank is currently low in PM10 credits due to recent transactions (mainly relating to new power projects). Costs for ERCs have increased substantially, with 2 to 5 fold increases in prices over the last few years. The RECLAIM program is currently applicable for power plant NOx emissions; however, the District is undergoing rulemaking revisions to allow power plants to opt out of the RECLAIM program for NOx or opt into the RECLAIM program for SOx. They are also investigating the creation of air quality investment programs for sources to fund district creation of ERCs. The 1999 NOx emissions for RECLAIM sources were above their allocations and the price for NOx RECLAIM Trading Credits (RTCs) has increased by over ten-fold. SCAQMD is trying to stabilize the cost for NOx RTCs. Additionally, the District is interpreting and will implement the requirements of AB 970 and the recent executive orders to the best of their ability in order to help site new power projects within the SCAB.

Steve Moore, San Diego Air Quality Management District

No state offsets are currently required under AB 3319 for the San Diego Air Basin as long as the district demonstrates no net increase in pollutants. However, due to growth in the area, that may not be possible in the future. No CO, SOx, or PM10 offsets are required under federal regulations for the San Diego District. NOx and VOC emissions must be offset at a 1.2:1 ratio for projects with emissions above 50 tons per year. For

comparison, the proposed Otay Mesa project has estimated emissions of 100 tons per year of NO_x, which requires 120 tons of ERCs. The current ERC bank shows 122 tons of NO_x and 224 tons of VOC. Inter-pollutant trading of VOC for NO_x is allowed at a 2:1 ratio, which means that there is an equivalent amount of NO_x ERCs of 234 tons in the basin. Of these totals, 50 tons are optioned to PG&E and most of the rest are not for sale. Additionally, RACT adjustments have not been accounted for in the ERC totals. The typical turbine power plant has been controlled from a level of 225 ppm in 1970, to 42 ppm in 1973 (Rule 68), and 9-15 ppm using Best Available Retrofit Control Technology (BARCT) in 1997, which has lowered the need for ERCs. Potential sources of ERCs include overhauling existing sources, however District rules only allow this for same-site sources unless the source is shutdown prior to construction of the new source. The District currently exempts from permitting pre-1994 turbines under 1 MW and boilers less than 5 MMBtu/hr. Their experience indicates that the creation of MERCs is more expensive than the cost of obtaining conventional ERCs, even though the cost of conventional ERCs has increased five-fold in recent years.

Neil Pospisil, Calpine

Calpine has recent ERC/offset experience with their Los Medanos, Sutter Power, and Delta Energy Center Projects. All of these projects required ERCs during the permit process, and Calpine obtained necessary ERCs for each. This requires advanced planning. However, acquisition of ERCs can be compromised by regulatory uncertainties and the potential for the Energy Commission to require additional ERC mitigation beyond the requirements of the local air pollution control agency. Inter-pollutant trades have worked well for the Bay Area projects that Calpine has proposed. This has not been the case in other areas where ERCs have been required by the Energy Commission, but have not been required under air district regulations. Calpine's major concerns regarding offset constraints are the following: 1) there is a shortage in PM10 ERCs statewide; 2) uncertainty in the offset packages being proposed cause significant risk in the siting process; and 3) Calpine would suggest that projects be permitted using available ERCs plus mitigation fees in lieu of ERCs when no conventional ERCs are available. Answering questions from Commissioners Laurie and Pernell: 1) ERC availability is a critical factor that is considered by Calpine in the initial siting process for a new plant; 2) Calpine keeps records of ERC availability and uses them along with other siting constraints in their planning process; 3) ERCs are generally required in the areas with the highest current load demand and projects are also generally sited near the load demand due to all of the other siting constraints (i.e. gas lines, etc.); 4) mitigation fees would help a power project proponent in areas with limited offset options (i.e. Otay Mesa) 5) Calpine has had additional offset mitigation be required by the Energy Commission above that required by the local air pollution control agency and that mitigation has consisted of traditional ERCs; 6) the requirement for additional ERCs from the Energy Commission occurs during the normal certification process timeframe as allowed in AB970. Mr. Nazemi and Mr. Moore identified funding for the Carl Moyer diesel retrofit program as a potential way of using emission fees to create ERCs.

Steve Cohn, SMUD

The Sacramento area and SMUD's electricity demand is growing fast. SMUD currently has resources for ½ of the existing load demand. SMUD has added over 400 MW to

their system over the last few years, a 44 MW peaker is currently being added, another plant is being upgraded to provide a reliable supply of 75 MW, and they are negotiating for up to 45 MW of wind power from Solano County. For the future, SMUD is looking to add a 500 or maybe 1000 MW gas-fired plant at the Rancho Seco site. Offsets are the most significant constraint in the Sacramento area and currently there are very few banked ERCs. In the area, over 80 percent of the emissions are from mobile sources, and they remain the greatest untapped source of future emission reductions. Traffic improvements could reduce mobile emissions and ease area congestion as well. SMUD would like to work with the Energy Commission and other agencies to make mobile source emission reductions a practical source for creation of ERCs. A new local program called SECAT is currently working to replace old diesel engines or vehicles in order to reduce emissions in the air basin. While putting money into programs like these for ERC creation is helpful, SMUD would encourage more creative options like funding transit districts to make improvements in their systems. It is clear that most transit districts need the money to improve services and that if transit services are provided they will be used. These kinds of solutions would not just improve air quality but would address other societal issues as well. Mr. Tooker noted that SMUD initially proposed a mobile offset program several years ago to provide offsets for a proposed powerplant. The proposed mobile offset program was subsequently stopped because the air quality agencies couldn't agree on the proposal. SMUD would look forward to try another mobile source offset program in the future.

Gail Ruderman-Feuer, National Resources Defense Council

Ms. Ruderman-Feuer indicated that conservation and use of renewable energy would reduce the power requirements and that no offsets are necessary for the creation of some renewable energy sources. Ms. Ruderman-Feuer agreed that there does appear to be a shortage of NOx ERCs in San Diego and PM10 ERCs in the SCAQMD, but there are sufficient offsets available in other areas. She was not sure that power plants need to be sited near the load centers. She expressed concern that the use of mobile source emission reductions is not legal, that they do not meet the five requirements (real, quantifiable, etc.), and that they need to provide years of emission reduction. She recommended that offsets be obtained from controlling existing sources, such as the many uncontrolled power plants in the SCAQMD. She suggested requiring all power plants be retrofitted to BARCT and allow the owners to sell the ERCs that are created. She noted that SCAQMD has documented the potential for 10,000 ton per year of NOx reduction using controls that would cost \$3,100 per ton at the existing refineries and power plants in the SCAB. She suggested that since financial incentives do not seem to be enough to encourage retrofit, additional regulatory requirements should be put in place. The NRDC believes that the use of mobile sources to offset emissions should be a last resort and that mitigation fees are even worse. NRDC also believes that ERCs should be created in actuality prior to their use. NRDC is concerned about the executive orders recently enacted, and provided the Energy Commission with a position paper regarding these orders. NRDC has concerns regarding inter-pollutant trading as the technical basis for these trades are not proven.

PUBLIC COMMENT

Ann Simon, Communities for a Better Environment

Ms. Simon expressed concern that ERCs are used like pipes or any other commodity as a construction input to these projects and that they shouldn't be treated that way. Ms. Simon noted that the creation of ERCs without real benefit, just to create these construction inputs is not what should be considered. Ms. Simon suggests offsets not be treated as commodities in order to produce an actual air quality benefit. Ms. Simon believes that mobile ERCs used for stationary sources is not legal under federal law. Commission Pernell asked whether the scenario identified by Mr. Cohn of SMUD would be a viable scenario for mobile to stationary ERC use. Ms. Simon responded no it is not legal under the Federal CAA and the years of reduction are not consistent with the years of emissions from the new stationary source. Commissioner Pernell then commented that public transportation could be assumed to last 30+ years, to which Ms. Simon agreed that reducing pollution from mobile sources is beneficial on its own. Ms. Simon urged the Commission to consider emission controls at existing sites and to consider environmental justice during the siting process and consider the impact overburden that existing sites may have and identify more remote alternatives regardless of the efficiency issues.

Cindy Tuck, California Council for Environmental and Economic Balance

Ms. Tuck agreed that there is an emission credit availability problem. Ms. Tuck believes that the Energy Commission should not require ERCs above what is required by federal and local air quality regulations, and be careful about any additional project mitigation being required. Ms. Tuck noted that the EPA's RACT adjustment requirements stem from an internal memorandum and are not based in law and should be challenged. Ms. Tuck believes that the existing banking system gives companies responsibility for their emission reduction credits and that concerns regarding credit hoarding should not be used to force anyone to sell ERCs.

Mr. Nguyen of EPA then provided additional clarification of EPA's ERC RACT adjustment requirements.

Jim Martin, Environmental Defense Fund

Mr. Martin is concerned about NOx emissions. He notes that studies indicate that NOx is implicated in the formation of ozone, PM10, nitrate deposition and haze in Class I areas. Mr. Martin noted that unlike other pollutants, NOx emissions are increasing rather than decreasing, which is creating a problem. Mr. Martin suggests that care be taken in dealing with NOx emissions due to the increase in NOx related impacts

Mahesh Talwar, OceanAir Environmental

Mr. Talwar noted that the use of MERCs can be troubling but would like environmental groups to support actions that work. Mr. Talwar indicated that the Carl Moyer program was created under a state bill, and therefore, this program has commonality regardless of specific local agency acceptance. Considering RACT adjustments for ERCs, Mr. Talwar believes that ERCs are often RACT adjusted going into the process and should not be adjusted twice without careful consideration of double counting the adjustment.

He stated that the values of ERCs and potential adjustments prior to sale should be known up front. Mr. Talwar recommended that the Energy Commission should not evaluate fine particulate matter (PM2.5) from powerplants until a federal standard for PM2.5 is enforceable.

John Grattan, Grattan and Galati

Mr. Grattan believes that the Warren Almquist Act's requirement that offsets be in place prior to certification is more stringent than most district regulations and federal law, and impedes quick certification and construction of needed power plants. Mr. Grattan suggested that offsets should only have to be identified and not acquired during the process, but be provided 30 days prior to operation. Commissioners Laurie and Pernell then questioned Mr. Grattan about whether financing could be completed without offsets, what would happen if offsets could not be obtained, and if operation should be allowed without offsets if problems occur? Mr. Grattan indicated that financing could be completed, the proposals would only go forward without offsets "in-hand" if the risk that offsets could not be procured was low, and that power plant should not be allowed to operate if offsets can not be found.

Mike Murray, Semptra Energy

Mr. Murray indicated that this discussion was invaluable, that this is a short-term and long-term problem, and that the forecasted 5000 MW shortfall this summer was real. Mr. Murray indicated that the 5000 MW short-fall could be met by 1) additional conservation, 2) interruptible power, and 3) expedited siting of new power projects while still meeting all regulatory requirements. Mr. Murray indicated that siting does in fact need to occur near load and power infrastructure for many reasons, although line loss is only significant when the distance is thousands of miles. Mr. Murray agrees that mobile source credits need to be made available and used for stationary sources and that inter-district trading is important.

Larry Allen, San Luis Obispo Air Pollution Control District

Districts are aware of the ERC shortage. CAPCOA will be conducting a study of this issue for power plants and other sources. The increased use of ERCs from new power projects will deplete banks and cause this to become a greater constraint that will effect other industries. ERC needs can be reduced by the use of more efficient control technologies (i.e. SCONOX). Additional ERCs can be made by controlling existing under-controlled facilities, but there may need to be some flexibility with regard to the timing of when these permanent ERCs are created. He suggested that applicants be required to look for existing sources to be controlled and control them if possible before using available ERCs. Unpermitted sources, such as agricultural pumps, should be identified and controlled. There is a concern that certain technologies being required, such as CO catalysts, have potential detrimental effects (i.e. increasing PM10 emissions) that should be addressed. ERC trading ratios are a concern and can be used to create ERCs in the most beneficial way, an example is giving more than 1 lb of ERC for 1 lb of diesel exhaust PM10 reduction due to the significant health effects of diesel exhaust. Conservation and renewable energy are important, and all of the new gas-fired plants being proposed may keep new renewable energy sources from being built.

PANEL 2: INNOVATIVE OFFSET SOURCES AND SOLUTIONS FOR LACK OF OFFSETS

Mohsen Nazemi, South Coast Air Quality Management District

Mr. Nazemi presented a summary of innovative offsets that have been proposed in the SCAQMD. To mitigate potential impacts from the proposed merger of SDG&E and SCE, it was proposed to retrofit agricultural pump engines with electric motors. The proposal was dropped when the merger fell through, however SCE eventually completed this project, which SCAQMD considered to meet the 5 ERC criteria (real, quantifiable, etc.). SCE received 75 tons of NO_x ERCs that were limited to a ten-year lifespan (1993 to 2003), which were subsequently converted to NO_x RTCs. SCAQMD considers MERCs to be an allowable method for ERC creation when they create emission reductions that are truly surplus. SCAQMD also believes that MERCs should have a limited lifespan. Retrofit of sources in SCAQMD is not practical as SCAQMD uses BACT emissions as the ERC creation threshold, so only shutdowns would result in any appreciable bankable emission reductions. SCAQMD currently has both area source and MERC emission reduction programs submitted for EPA approval. Without prior EPA approval, SCAQMD considers these types of programs to have significant risk (i.e. being disapproved late in the process).

Steve Moore, San Diego Air Quality Management District

Mr. Moore outlined the MERC program that was created for the proposed Otay Mesa project. SCAQMD identified that the 5 ERC criteria would have to be met in order for the program to go forward. The program consisted of replacing Heavy-Heavy Diesel and marine vessel engines with CNG and LPG engines. Issues addressed during the creation of this program included: 1) credits were necessary for the life of the project and the MERCs would have shorter timeframes; 2) the engines being retrofitted could be displaced by competitor vehicles; 3) local impacts from the project may not be adequately addressed by the MERCs. To deal with these concerns they limited the program to refuse collection trucks and marine vessels that were captive to San Diego County and had lives of 8-10 and over 30 years, respectively. During the process, EPA wanted to make sure that the program did not allow any backsliding, meaning that future replacement engines be at least as good as what they replace so emissions are always going down. CARB wanted to front-load the emissions reduction requirements so that the emission reduction for the shorter life-span vehicles would cover the entire 30 year emission obligation. This could be done by incorporating a discount factor for shorter lifespan vehicles. SCAQMD was in favor of the front-loading methodology as it created the emission reductions sooner rather than later, aiding in attainment goals. Additionally, both parties required significant record keeping by both the mobile source owner and the MERC user to ensure that the emission reduction requirements were continually being met. The MERC user is also responsible for any deficit that may arise from reduced vehicle activity. The program was limited to NO_x ERCs only and does not allow inter-pollutant trading of these MERCs. SCAQMD believes the benefits of this program to be: 1) real emission reductions (as opposed to using credits from reductions that may have occurred years earlier) in excess of what you get normally in the NSR process; and 2) diesel toxic emission reductions. Drawbacks of this program include: 1) the limited scope; 2) the onerous record keeping requirements; 3) potential user liability;

4) cost (~\$150,000/ton) and; 5) the real “surplus” reduction potential will drop as vehicles get cleaner in the future.

Duong Nguyen, EPA

Mr. Nguyen outlined EPA’s current MERC point of view. EPA is currently determining how MERCs can be used in the long-term. MERCs may be allowed in future cases but only on a case-by-case basis. The SDAQMD case was conditionally allowed because it met all five ERC requirements, and the framework of that case will likely be used in future cases.

Gordon Hester, Electric Power Research Institute

Mr. Hester discussed how to make a state emission bank useful for power generators. The program the state will use to create and apply ERCs should meet the following criteria: 1) aid in the expedited permitting process and; 2) not compromise environmental objectives. In order to aid in the expedited permitting process, the ERC generation should be done where ERCs will be needed and in time for their use and be in areas that have access to fuel sources. In order to maintain environmental objectives: 1) ERCs need to be made available; 2) price of offsets should be a function of the emission rate or a function of the objectives of the Governor’s executive order; 3) costs should also reflect control technology costs; and 4) the ERC costs should have certainty (i.e. be available at a known cost). The program should be kept simple or it won’t be used.

Mahesh Talwar, OceanAir Environmental

Mr. Talwar noted that MERCs were used in Santa Barbara County in the early 1990s to provide CEQA mitigation for petroleum development projects. CEQA mitigation is unlike NSR offset requirements in that the 5 ERC criteria (real, enforceable, etc.) do not have to be strictly met. The SDAQMD MERC program was initiated over 2½ years ago and required a significant amount of time and money but eventually came to fruition. It takes time and money, to create these innovative solutions and the regulatory barriers are tremendous, so these kinds of innovative approaches may not be feasible in six months. Government regulation and programs are also in competition with private companies that want to create ERCs. The ERC banks that were healthy four years ago are now depleted, so innovative solutions are being considered. However, rulemaking may be necessary to allow these approaches and that will take time. Mr. Talwar recommended that the Energy Commission allow more liberal CEQA type approaches for offsets that they may require in addition to district requirements. Additionally, Mr. Talwar supports the proposed bill that will put all of the emission reduction credits created by government programs into a bank that can be used for power plant projects. Mr. Talwar also recommends encouragement or incentives for the use of alternative fuels such as bio-diesel or ethanol.

Ken Lim, Bay Area Air Quality Management District (BAAQMD)

Mr. Lim discussed the availability of ERCs in the Bay Area, noting that “on the books” there seems to be sufficient NOx and VOC ERCs; however, prices will increase due to reduced availability. PM10 is currently very constrained, however, most power projects do not trigger offsets under BAAQMD trigger levels for PM10. However, if this

mitigation is considered necessary under CEQA by the Energy Commission then the availability of PM10 ERCs will be constrained. Mr. Lim indicated that a silver lining of the high offset cost is that it drives more efficient control technologies and creates an incentive for the creation of new ERCs. Mr. Lim believes that it is the offset issue that has driven the proposed NOx levels from 20 ppm to 2.5, rather than District BACT requirements. Mr. Lim also stated that the District has a community offset bank for small sources (i.e. <50 tons/year) and that the District has been receiving more inquiries regarding the process to create ERCs than at any time in the past.

George Poppic, California Air Resources Board (CARB)

Mr. Poppic indicated that CARB is in the process of reviewing the recent executive orders. Mr. Poppic indicated that one of these orders required CARB to create an offset bank for peaker power projects. He stated that CARB was determining how they could accomplish this, and that the Carl Moyer program is one potential method CARB may use to create ERCs. CARB is grappling with how to address the other executive orders that address the increasing power from existing plants, and expedited permitting of new plants. Answering Commissioner Laurie's question about ARB's role in determining if there are conflicting public policies, Mr. Poppic indicated that CARB is strictly limited to air quality issues and does not address larger public policy issues.

PUBLIC COMMENT

Eric Walthers, TRC

Mr. Walthers suggested that analyzing projects using a risk-based analysis/risk-based management approach could simplify the certification process and ensure the project meets insignificant impact goals. Mr. Walthers also believes that the Energy Commission should not impose mitigation above that required by local and federal law and that, in his experience, such additional mitigation is not required for other industries.

Mohsen Nazemi, SCAQMD

In response to a written comment from NRDC that noted that ERCs could be easily created through the retrofit or closure of existing power plants, Commissioner Laurie asked Mr. Nazemi to address the BACT-down provision of SCAQMD ERC rule. Mr. Nazemi indicated that he wanted to address other issues as well. Mr. Nazemi noted that revisions to the RECLAIM rules were being considered to let power plants get NOx ERCs outside of the RECLAIM NOx RTC trading program. However, ERCs generated outside RECLAIM in the basin are post-BACT emission reductions (this is due to an agreement with EPA regarding the current offset ratio of 1.2:1 that is allowed for the district); therefore, only shutdowns are likely to provide a potential for creation of new ERCs. Mr. Nazemi also noted that there are ongoing NSR reform actions occurring at EPA, which could change how ERCs are discounted. Mr. Nazemi also had other specific concerns including: 1) while regional pollutants require regional solutions and that localized impacts of a project should also be addressed. If the impacts are not significant then no additional consideration of disproportionate impacts under environmental justice should be made; 2) there should be a prioritization to clean up the oldest and highest emitting existing power plants with re-powered plants; and 3) SCAQMD is in favor of the concept of environmental dispatch.

Taylor Miller, Downey, Brand, Seymour and Rohwer

Mr. Miller wanted to make sure that the Energy Commission was aware that there is an offset problem in both Southern California and Northern California. Mr. Miller noted that cars and trucks are the majority of the air pollution problem so he suggested that the potential use of MERCs should be kept on the table.

Suma Peesapati, Citizens for a Better Environment

Ms. Peesapati was pleased to hear that there will be a future hearing on local issues that will include discussion on environmental justice issues. Ms. Peesapati noted that the power crisis may portend an environmental justice crisis. Ms. Peesapati believes that MERCs are not legal under Federal Law and the use of mobile source reductions may not address the environmental justice issue of local impacts. Ms. Peesapati noted that the Federal Clean Air Act's limitation of emission credits being obtained from stationary sources was meant as an economic incentive program for emission reductions and ERC costs should reflect control cost incentives. Ms. Peesapati was concerned that NOx and PM10 emissions are not air toxics and are not subject to the same localized impact restrictions as air toxics

Bill Chamberlain, Energy Commission Chief Counsel

Mr. Chamberlain expressed concern about the general lack of regulations for small emission sources with relatively low emissions. Mr. Chamberlain cited a shortage of low-NOx turbines that may cause project proponents to try to permit at higher levels which can't be appropriately sited and certified. Mr. Chamberlain expressed concern that if power demands can not be met it could cause a major increase in the use of small household generators, which have significantly higher emissions than the turbine projects that couldn't be sited.

George Poppic, CARB

Mr. Poppic noted that local air districts are fairly constrained in what they permit and what they can require in terms of mitigation. Mr. Poppic noted that the certification process should include assessment of all project impacts, including construction emission impacts, in order to determine necessary project mitigation for the project as a whole.

ANSWERS TO THE QUESTIONS RAISED IN THE COMMITTEE'S WORKSHOP NOTICE

Issue 1: What regulations require emission offsets and what criteria are used for approving emission offsets?

1. *Are emission offset air quality permitting requirements embodied in Federal Law? What are the federal, state and local requirements? How do emissions trading programs such as RECLAIM apply to new electric generating projects?*

Yes, offset requirements are required in the PSD/NSR regulations of the Clean Air Act. Additionally, the State of California has offset requirements written in the California Clean Air Act. The specific requirements vary based on the specific area's attainment status and State Implementation Plan (SIP) requirements proposed to meet the area's attainment goals. Areas with the worst air quality have the most stringent offset requirements. RECLAIM is a SCAQMD specific regulation that only currently applies to NOx emissions. There are no other similar programs or regulations known to exist for power plants in California.

2. *Do emission offset requirements apply equally for all projects in all locations?*

No, offset triggers and offset ratios are specific to each local air quality district and are dependent on the air quality attainment status. Some districts have no offset requirements and others have triggers as low as 4 tons/year. Offset ratio requirements can vary from 1:1 to 1:5 for like pollutant offsets and may be significantly higher for inter-pollutant or inter-basin offsets. The regulations governing the use of inter-pollutant and inter-basin offsets are also district specific and must meet specific federal criteria.

3. *How have emission offsets typically been generated? What do the evaluation criteria "real, quantifiable, permanent, surplus and enforceable mean"?*

Emission offsets have traditionally been generated by stationary source equipment shutdown or "over control".

Messrs. Nazemi, Nguyen, and Moore at various points in the workshop noted that real emission reduction means that there is an actual verified emission reduction not just on paper; that quantifiable means that there are records to quantify the emission reduction; permanent means that the emission reductions will generally last as long as the new project (i.e. 30+ years); surplus means that the reductions were not required under other regulations or SIP requirements; and enforceable means that the local and/or federal authorities can exercise control, by some means, of the emission reductions.

4. *Where are emission offsets currently available? How are emission offsets banked? How are emission reductions discounted before being banked and at the time of use?*

A full accounting of all district ERC banks was not available for the Workshop. However, the following district information was presented. The staff paper provided ERC bank information for SCAQMD, SJVAPCD, BAAQMD and SDAQMD. The San Joaquin Valley has the largest ERC bank and the Bay Area has sufficient ERCs for a few power plant projects. Most other areas have limited available ERCs. The South Coast Air Basin is running out of PM10 ERCs and San Diego has a very limited amount of VOC and NOx ERCs. Mr. Nazemi of SCAQMD and Mr. Moore of SDAQMD provided additional information regarding the status of their

emission banks, including the status of the RECLAIM NOx RTC bank for SCAQMD.

ERCs are banked by application for each source being reduced similar to a permit application.

As noted by Mr. Nguyen, EPA requires ERCs to be RACT adjusted (i.e. discounted) at time of use, with the exception of ERCs from the SCAB, as noted by Mr. Nazemi, where ERCs have been created by post-BACT control and are not required to be RACT adjusted.

5. *How have emission offset requirements affected the licensing of recent electric generating facilities?*

To date all certified projects have been able to get conventional ERCs for certification. Mr. Pospisil noted that the three projects they have submitted were able to obtain ERCs. However, recent projects still in review have either had to resort to unconventional offset measures, such as the use of MERCs, as noted by Mr. Moore, or are still looking to find offsets for certain pollutants (i.e. PM10 and SO2). This problem will become more common as ERC banks continue to be depleted.

6. *What is the current and long-term availability of emission offsets? How will the long-term availability of emission offsets affect licensing of electricity generating facilities?*

The current availability of offsets is limited in most areas of the state and the long-term availability will likely be more limited than current availability. The lack of ERCs for offsetting projects could limit the number of new gas-fired projects that can be sited in the state.

Issue 2: What measures could be implemented to increase the availability of emission offsets?

1. *What innovative sources of emission offsets could be pursued?*
a. *Area source emission reductions?*

This issue was briefly discussed by Mr. Nazemi in the context of NOx emission reduction credits that were obtained through the replacement of agricultural engines with electric driven motors. SCAQMD considered this method to meet the five criteria for ERC creation (real, quantifiable, etc.) and 75 tons of NOx ERCs were issued, but these ERCs were only given a ten-year (1993 to 2003) lifespan. This process was considered feasible but was not completed as the project it was going to be used for was canceled. Additional discussion of road paving indicated that this method was viable for the creation of PM10 ERCs. Therefore, it would appear

that area source emission reductions could be pursued, provided regulatory requirements can be met..

b. Mobile emission reduction credits?

The use of MERCs is currently being implemented for the Otay Mesa project. EPA approved the program for this site. Mr. Moore provided details on how the garbage truck and marine vessel engine retrofit/replacement program was going to be implemented. Mr. Nguyen indicated that EPA would only approve this type of ERC on a case-by-case basis. Therefore, it would appear that MERCs may be a viable option for creating ERCs. However, Mr. Moore also indicated that the expense of creating MERCs was much higher than the expense for traditional ERCs (~\$150,000 ton).

However, it should be noted that a couple of the public commenters stated that they believe that the use of MERCs is not legal under the Clean Air Act.

c. Agriculture emission reductions?

Other than the proposed agricultural pump engine replacement discussion by Mr. Nazemi, this topic was not specifically addressed by the panelists.

d. Currently unregulated emission source reductions?

As noted above, other than Mr. Nazemi's discussion of the proposed agricultural pump engine replacement, this topic was not specifically addressed by the panelists.

e. Inter-pollutant emission reductions?

The use of inter-pollutant emission reductions was noted to have occurred and is a currently viable means of emission offsetting where allowed. It was noted that inter-pollutant offsets are generally only allowed in pre-cursor compounds such as NO_x for VOC when offsetting to provide mitigation for Ozone impacts, or NO_x or SO_x when offsetting for PM₁₀ impacts.

f. Inter-basin emission reductions?

The use of inter-basin emission reductions can be used, but as indicated by Mr. Nguyen and Mr. Nazemi, this method of offsetting can only be used in downwind areas where the air quality is worse than in the upwind area where the ERCs are being obtained. Methods used to calculate appropriate offset trading ratios are complex and often disputed when applied to individual projects.

g. Other?

No specific other methods of creating ERCs was discussed by the panel.

2. What are the limitations to using or obtaining emission reductions from any of the above?

a. Are there regulatory limitations?

There are regulatory limitations on all ERC creation and use regardless of the source. As noted by Mr. Nguyen, ERCs have to meet the five criteria and specific uses such as MERCs, are only approved on a case-by-case basis.

b. How difficult and costly is it to apply these control strategies?

As noted by Mr. Talwar and Mr. Moore it can be a very difficult process to create non-traditional ERCs, the costs can be significantly greater than the creation of traditional ERCs, and burdensome record keeping requirements may be required.

c. What needs to be done to ensure that these reductions are real, quantifiable, permanent, surplus and enforceable?

Mr. Nguyen noted that the EPA will be the final arbiter on whether proposed ERCs meet the above criteria. Mr. Talwar suggested that all parties get together early in the process to make agreements on the viability of specific proposed innovative approaches to create ERCs.

d. Are there other methods of ensuring air quality impacts from power generation are mitigated? What federal, state, or local actions would be required to implement these measures?

This topic was not specifically addressed in the workshop. It does not appear that methods other than providing federally enforceable ERCs for federal offsets are viable. However, as noted by Mr. Talwar it is possible for the Energy Commission to use more liberal criteria for emission mitigation when required under CEQA.

STAFF RECOMMENDATIONS BASED ON WORKSHOP DISCUSSIONS

1. It is recommended that Air Pollution Control Districts examine temporarily opening their respective ERC “priority reserves”, if any exist, for the permitting of power plants to meet the current electricity shortfall when traditional ERCs are not available. It is further recommended that a fair market price be paid for the use of “priority reserve” ERCs.

2. It is recommended that representatives from local agencies, CARB, Energy Commission and EPA meet to determine feasible and legal ways to create ERCs.
3. It is recommended that Energy Commission, with the help of local districts, compile a list of high polluting power plants to be identified for potential control technology retrofit, and that the potential ERCs from such retrofit be identified.
4. It is recommended that Energy Commission should complete an updated offsets availability report in consultation with the local agencies to provide all parties information on the current status of local ERC banks and identify all regions that are currently constrained.
5. The Energy Commission should not require that measures required under CEQA necessary meet the Federal NSR offset requirements of being real, quantifiable, permanent or surplus, but rather that the measure have a substantial likelihood of eliminating or lessening the impacts of the project.
6. It is recommended that the Energy Commission discourage the hoarding or speculative accumulation of ERCs and encourage the Air Pollution Control Districts to find means that would allow new projects to be able to find and acquire banked ERCs.

